DROPLETS FROM THE PLANKTON NET -XVII. A Small Collection of Chaetognaths and Pelagic Tunicates from the North Eastern Part of the Indian Ocean-

AUTHOR(S):

Tokioka, Takasi

CITATION:

Tokioka, Takasi. DROPLETS FROM THE PLANKTON NET -XVII. A Small Collection of Chaetognaths and Pelagic Tunicates from the North Eastern Part of the Indian Ocean-. PUBLICATIONS OF THE SETO MARINE BIOLOGICAL LABORATORY 1955, 5(1): 75-80

ISSUE DATE:

1955-12-20

URL:

http://hdl.handle.net/2433/174534

DROPLETS FROM THE PLANKTON NET[1)]

TAKASI TOKIOKA

Seto Marine Biological Laboratory, Sirahama

With 5 Text-figures and 3 Tables

XVII. A Small Collection of Chaetognaths and Pelagic Tunicates from the North Eastern Part of the Indian Ocean.

(Figs. 19–21)

The present material consists of three samples respectively collected in the following localities during the exploring voyage of the Syunkotu-maru, a surveying ship of the Simonoseki College of Fisheries.

1. Near the Nicobar Islands (0–100 m), Dec. 27–28, 1953, (11–15 h); obtained by two hauls.
2. Near Nias Island (0–100 m), Jan. 2–5, 1954; obtained by three hauls.
3. Between Bali and Lombok (0–100 m), Jan. 18–22, 1954 (13–16 h); obtained by three hauls.

This contains the following 27 forms in the proportions shown below.

Table I. Cheatognaths. (Numerals in parentheses indicate the percentages.)

Species \ Locality	Nicobar	Nias	Bali-Lombok
Sagitta hexaptera	2 (3)	4 (3)	3 (2)
Sagitta enflata	20 (30)	34 (21)	55 (35)
Sagitta bipunctata	1 (2)		4 (3)
Sagitta bedoti	3 (4)	5 (3)	15 (9)
Sagitta pulchra			1 (1)
Sagitta robusta	5 (8)	3 (2)	5 (3)
Sagitta serratodentata pacifica	6 (9)	38 (24)	32 (20)
Sagitta neglecta	3 (5)	7 (4)	3 (2)
Sagitta regularis	8 (12)	34 (21)	10 (6)
Sagitta minima		1 (1)	
Pterosagitta draco	18 (27)	34 (21)	27 (17)
Krohnitta subtilis			1 (1)
Krohnitta pacifica			2 (1)
Total	66	160	158

1) Contributions from the Seto Marine Biological Laboratory, No. 270.

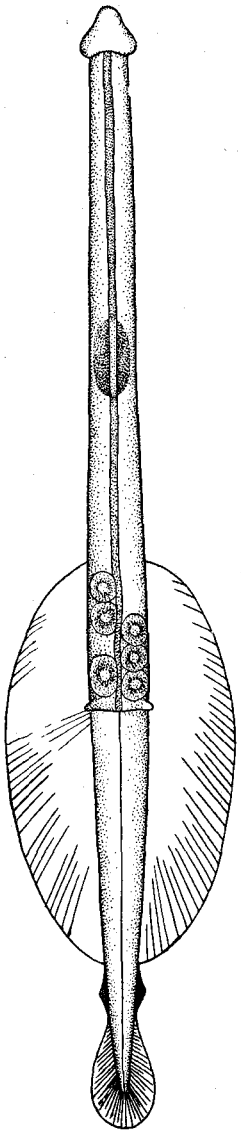

Fig. 19. *Krohnitta subtilis* (GRASSI). An individual with large mature ova. ×15

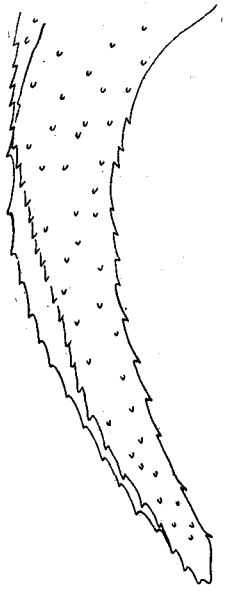

Fig. 20. *Thalia democratica* (FORSKÅL). An atrial palp. ×110

Chaetognaths: *Sag. enflata, Pterosag. draco* and *Sag. serratodentata pacifica* are the commonest species and next *Sag. regularis* being followed by *Sag. bedoti* and *Sag. robusta.* The single specimen of *Krohnitta subtilis* from Bali-Lombok (Fig. 19) seems to be noteworthy in having three large mature ova in each trunk-coelom; these ova are enclosed in the range between the anterior end of the lateral fin and tail septum. This individual is 9.6 mm in length, its seminal vesicles have already bursted.

Table II. Pelagic tunicates.

Species \ Locality	Nicobar	Nias	Bali–Lombok
Thalia democratica	r	1	r r
Doliolum Amme		1	
Oikopleura longicauda		4	
Oikopleura fusiformis	1	6	3
Oikopleura gracilis?		2	
Oikopleura rufescens			1
Oikopleura cophocerca	2	2	1
Stegosoma magnum		5	
Megalocercus huxleyi			1
Fritillaria haplostoma			1
Fritillaria formica	1		
Fritillaria pellucida			1
Fritillaria borealis f. *sargassi*		1	1
Fritillaria venusta			1

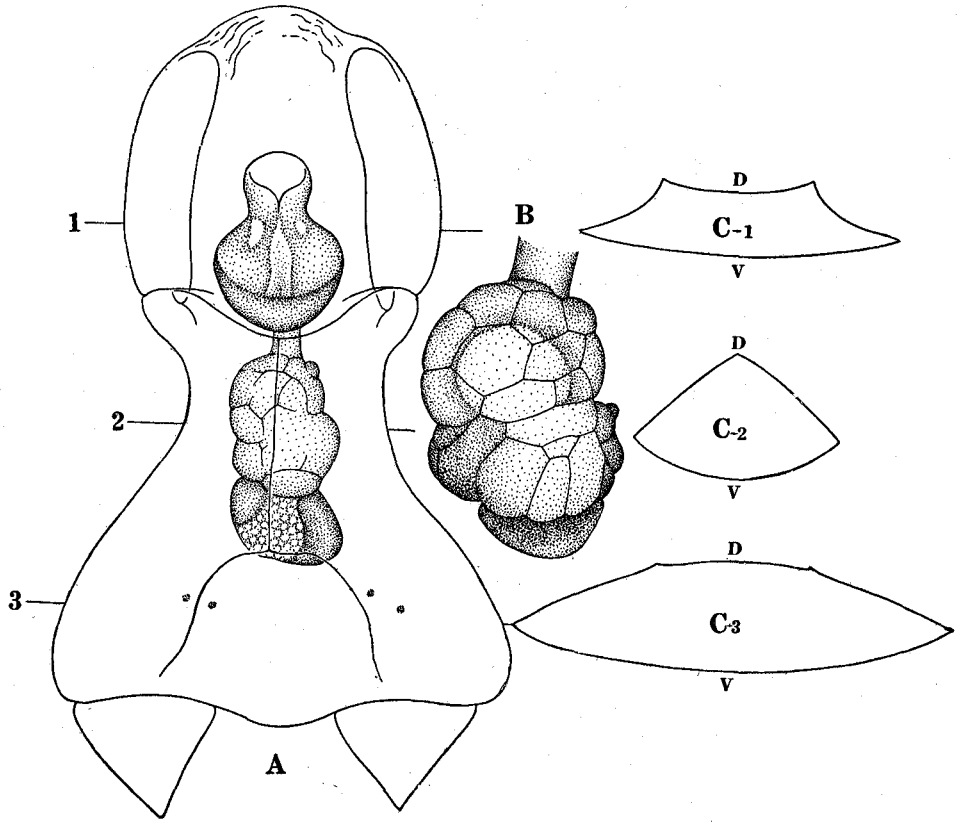

Fig. 21. *Fritillaria venusta* LOHMANN.
A—Dorsal side, ×110; B—Alimentary organ, dorsal, ×200; C_{1-3}—Three sections of the test, respectively on the levels 1 (C_1), 2 (C_2) and 3 (C_3), ×110. d—dorsal, v—ventral.

Salpas: All the solitary forms of *Thalia democratica* found in the material are provided with the atrial palp simply pointed distally and with roughly triangular section; the palps are usually furnished with minute prominences (Fig. 20).

Appendicularians: Although the single specimen of *Fritillaria venusta* from Bali-Lombok is small, about 900 μ in length of the trunk, and quite immature, it is preserved so perfectly that the shape of its soft test of the trunk may be easily understood; three sections of the test are shown in Fig. 21.

Lastly I express my hearty thanks to Prof. T. CHIBA and Mr. S. TSURUTA by whose courtesy the present material was submitted to my examination.

XVIII. Short Notes on a Few Appendicularians Collected in the "Kurosio" off Siono-misaki.

(Figs. 22 and 23)

A few appendicularian specimens were selected out of the plankton samples collected by the surveying ship of the Kôbe Marine Observatory in the "Kurosio" off Siono-misaki in May 1954 and submitted by courtesy of Mr. K. FURUHASHI of the Observatory to my close examination. This material comprises:—

Oikopleura albicans (LEUCKART)	10 individuals
Oikopleura cophocera GEGENBAUR	2 „
Stegosoma magnum (LANGERHANS)	2 „
Althoffia tumida LOHMANN, 1892	1 tail
Fritillaria fraudax LOHMANN	1 individual

Results of various measurements on these specimens are shown in the last part of this note.

Oikopleura albicans: Subchordal cells increase with growth; for instance, they are merely 28 in a 2910 μ long tail, while they may be as numerous as 77 in a 5350 μ long tail. The arrangement of cells seems to be rather irregular in smaller specimens and becomes regular with growth, being composed of two parallel rows. In the posterior part, however, the arrangement keeps a single row even in fully grown individuals (Fig. 22 D–H).

Oikopleura cophocerca: Subchordal cells are divided into anterior and posterior groups, the former comprises 4 cells and the latter consists of 3 ones (Fig. 22 J).

Stegosoma magnum: In the larger specimen, the gonad is bent sharply at the posterior end and distinctly interrupted at this point (Fig. 23 K).

Althoffia tumida: As the arrangement of numerous (59 on both sides) tail cells differs from that in *Pelagopleura*, the present tail specimen is considered to belong to *Althoffia*. The posterior end of the chorda falls considerably in front of the distal end of the musculature (Fig. 22 I).

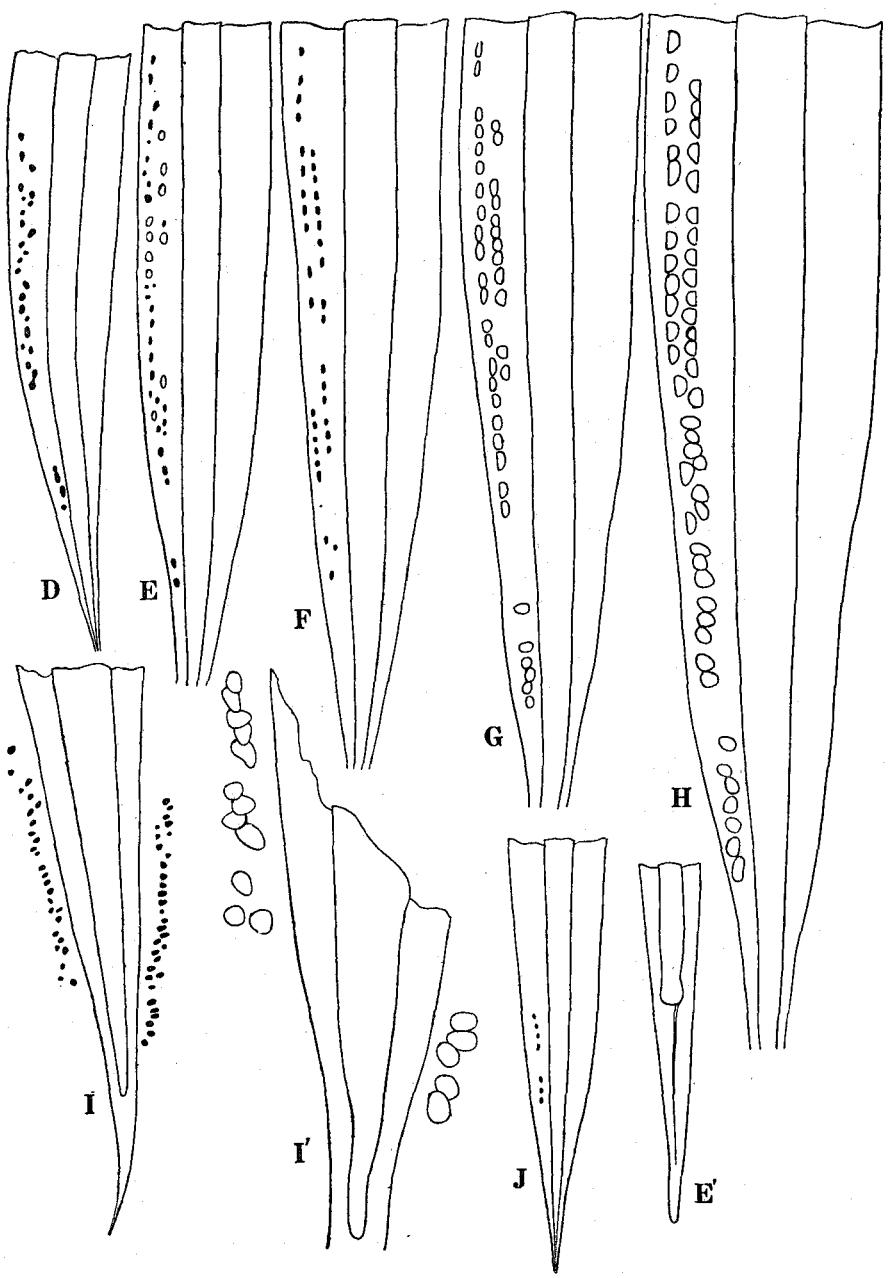

Fig. 22. D-H *Oikopleura albicans* (LEUCKART). Arrangement of subchordal cells, ×47. D—Tail length 2910μ; E—3390μ; E'—Distal end of the tail musculature, ×200; F—4650μ; G—4480μ; H—5830μ. I—*Althoffia tumida* LOHMANN. Distal part of the tail, showing the arrangement of tail cells, ×73; I'—The same, ×200. J—*Oikopleura cophocerca* GEGENBAUR. Arrangement of subchordal cells, ×47.

Fritillaria fraudax: The posterior end of the chorda does not reach the distal end of the musculature (Fig. 23 L).

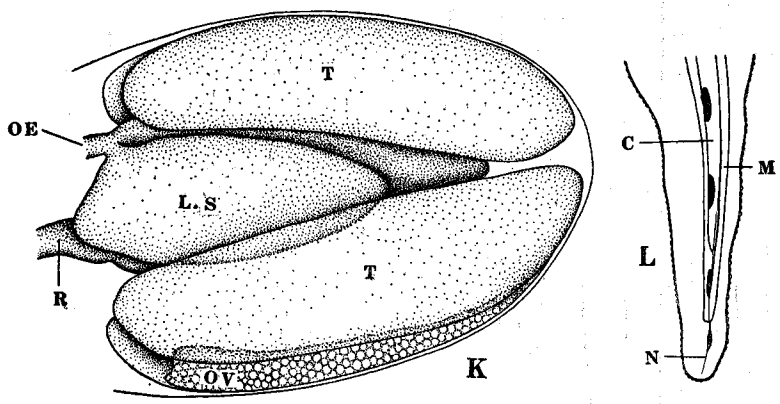

Fig. 23. K—*Stegosoma magnum* (LANGERHANS). Genital region of the trunk, left side, ×47; L—*Fritillaria fraudax* LOHMANN. Distal end of the tail, ×73. C—chorda, L.S—left stomach lobe, M—tail musculature, N—nerve, OE—oesophagus, OV—ovary, R—rectum, T—testis.

Table III. Various measurements on the material.
(C···Width of chorda, M···Width of tail musculature)

Trunk length (B)	Tail length (T)	$\frac{T}{B}$	Subchordal cells	$\frac{M}{T}\times 100$	$\frac{C}{M}\times 100$
Oikopleura albicans					
740μ	2910μ	3.9	28	11.3	34.8
930	3390	3.6	39	11.8	26.8
960	4650	4.9	36	10.1	37.9
1110	4480	4.0	40	11.2	25.7
1220	5570	4.6		10.8	29.8
1390	5830	4.2	52	11.8	26.0
1430	5350	3.7	77	11.7	28.4
1650	6260	3.8	61	11.9	28.8
1870	6650	3.6	59	10.5	35.7
1870	7300	3.9	55	12.0	30.9
Oikopleura cophocerca					
540	2780	5.1	7	10.8	23.8
	2650		7		
Stegosoma magnum					
1610	6520	4.1	8		
2000	8000	4.0	8		
Althoffia tumida					
	4220		27–32 (Tail cells)	18.1	25.0
Fritillaria fraudax					
1090	2550	2.3		7.4	32.1